IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	JUMA
Title	FILTER DEVICE FOR MOLTEN STEEL FILTRATION
Serial Number	10/516,438
Filing Date	30 November 2004
Art Unit	1723
Examiner	Kurtz, Benjamin M.
Attorney Docket No.	1488 (04-79)

To: Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 C.F.R. § 1.132

Dear Sir:

I, Kassim Juma, hereby swear and state that:

1. I have been active in research and development in the field of ceramics and/or metals for the last 30 years.

2. I received a Ph.D. degree in Ceramics from Sheffield University, which is located in Sheffield in the United Kingdom.

3. I am the author of 20 papers in the field of ceramics and/or metals.

4. I am listed as an inventor on 31 US patents and foreign patents, particularly relating to products and methods related to ceramics, metals and their processing.

5. I am very familiar with refractory filters as used in the casting of molten metals.

Juma

6. I have carried out and supervised numerous experimental and commercial trials concerning refractory filters.

7. I am co-inventor of subject matter described in the present application, U.S. Patent Application No. 10/516,438 ("the '438 application"), which was published as U.S. Patent Publication No. 2005/0263449.

8. Carbon occurs in nature in three distinctive forms: as diamond in a highly crystallized cubic structure; as graphite in a crystallized hexagonal structure; and finally, as a glass with no crystallized structure.

9. The three forms of carbon have wide differences in their physical characteristics despite the fact that all are carbon. It is therefore essential to state what type of carbon ones means when talking of carbon as a material or as a bonding medium. It is not only the physical properties that distinguish the three types of carbon from each other but also their precursors and their origin. Moreover, it is extremely difficult if not impossible to convert one type of carbon into another by any known physical or chemical means.

10. I have read and reviewed U.S. Patent No. 5,520,823 to Jones, and have found that the product described therein differs from the product of the present invention.

11. Jones discloses (col. 2, lines 10-16; also col. 3, lines 7-13) a filter in which the other materials present are "dispersed in a substantially amorphous matrix of borosilicate glass." Carbon does <u>not</u> form any part of the matrix.

12. The present application claims a carbon-bonded matrix. The claims describe a carbon-bonded filter, and teach the use of a carbon-bonding precursor.

13. Unlike Jones, the filter of the present application does not employ glass as a matrix material and, conversely, Jones does not employ carbon as a bonding matrix.

14. Jones also does not teach the use of a carbon bonding precursor. The graphite in Jones does not and cannot act as a carbon-bonding precursor. Further, borosilicate glass cannot act as a carbon-bonding precursor.

Juma

15. This difference in matrix materials is exhibited in the properties of the resulting filters. As is noted in the current specification, glassy bonded filters exhibit the drawback of cracking due to thermal shock. The use of a non-glassy material as the matrix in the present invention avoids this drawback.

16. It has been established that the process of the present invention does not convert graphitizable carbon precursor to graphitized carbon, but rather to graphitizable carbon. The specification contains references to the possibility of the production of either type of carbon in the product, but all references to the matrix in the present application are to a carbon-bonded matrix.

17. Jones teaches the use of graphite, but not as a matrix material. Graphitizable carbon is not graphite. Graphitizable carbon precursor is not graphite. Graphite cannot replace the function of graphitizable carbon precursor, which is the formation of a carbon-bonded matrix, in the present invention.

18. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the above-referenced application or any patent issuing thereon.

Date: 1st - Aug 2008

Kassim Juma

Juma